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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

09/899,554

07/05/2001

Arul A. Menezes

M61.12-0366

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11/26/2008

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EXAMINER

VO, HUYEN X

ART UNIT

PAPER NUMBER

2626

MAIL DATE

DELIVERY MODE

11/26/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 09/899,554 | Applicant(s) MENEZES ET AL. | |
| | Examiner HUYEN X. VO | Art Unit 2626 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-2 and 4-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-13 and 24-31 is/are rejected.
- 7) ☒ Claim(s) 14-23 and 32-41 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's arguments have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Horiguchi et al. (USPN 6243669) and Marcu (US. Patent Publication No. 2002/0040292).

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-2 and 4-41 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.
4. Claims 1-2 and 4-41 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing (Reference the May 15, 2008 memorandum issued by Deputy Commissioner for Patent Examining Policy, titled "Clarification of 'Processes' under 35 U.S.C. 101" – publicly available at USPTO.GOV, "memorandum to examining corps"). The instant claims neither transform underlying subject matter nor positively tie to another statutory category that

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accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2, 4-13, and 24-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meyers et al. (from IDS submitted 11/4/2002) in view of Horiguchi et al. (USPN 6243669).

7. Regarding claim 1, Meyers et al. disclose a computer-implemented method of associating dependency structures from two different languages on a tangible computer readable medium, wherein the dependency structures comprise nodes organized in a parent/child structure, the computer-implemented method comprising:

associating nodes of the dependency structures to form tentative correspondences on the tangible medium (*section 4.2, page 3, particularly the second term on the right hand side of equation 2; describing all possible correspondence between elements of the source language and elements of the target languages; source and target trees are dependency structures*);

aligning nodes of the dependency structures as a function of at least one of eliminating at least one of the tentative correspondences and structural considerations on the tangible medium (*section 4.2, page 3, particularly equation 2; all possible correspondence or pairings of the source language and target language are evaluated and the pairing with maximum score is the selected; eliminating all other pairings*); and providing an output from a computer indicative of the alignment of the dependency structures (*section 4.2, page 3, pairing with maximum score is selected*).

Meyers et al. fail to specifically disclose wherein associating includes forming tentative correspondences comprising translations of morphological bases and derivations. However, Horiguchi et al. teach wherein associating includes forming tentative correspondences comprising translations of morphological bases and derivations (*referring to translation of figure 5; before translation, morphological analysis is performed on the source language in step 502; col. 19, line 32 to col. 20, line 50, describing morphological analysis on the source text before subjected to translation*).

Since Meyers et al. and Horiguchi et al. are analogous art because they are from the same field of endeavor, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Meyers et al. by incorporating the teaching of Horiguchi et al. in order to improve translation accuracy.

8. Regarding claims 3-8, Meyers et al. further disclose the computer-implemented method wherein associating includes forming tentative correspondences comprising bases and derived forms of translations (*section 3, page 2*), wherein associating

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includes forming tentative correspondences between nodes wherein one of the nodes comprises more lexical elements than the other node (*figure 2*), wherein said one of the nodes is a single word in one of the languages and said other node comprises at least two words in the other language (*figure 2 or referring to section 6*), wherein aligning pursuant to structural considerations comprises aligning nodes as a function of a set of rules (*sections 5-6*), wherein each of the rules of the set of rules are applied to the dependency structures in a selected order (*sections 5-6*).

9. Regarding claims 9-11, Meyers et al. further disclose the computer-implemented method wherein each of the dependency structures comprise a set of unaligned nodes and wherein each of the rules are applied successively to the set of unaligned nodes until a set of aligned nodes is identified, then the nodes of the set of aligned nodes are removed from the set of unaligned nodes and each of the rules of the set of rules is again applied successively to the set of unaligned nodes (*Greedy algorithm in section 5, page 4, steps 1-5, particularly step 2-3*), wherein one rule of the set of rules comprises aligning a set of nodes if a bidirectionally unique translation exists (*sections 5-6*), wherein one rule of the set of rules comprises aligning a pair of parent nodes, one from each dependency structure having a tentative correspondence to each other, if each child node of each respective parent node is already aligned to a child of the other parent node (*section 4.2, page 3*).

10. Regarding claims 12-13, Meyers et al. further disclose the computer-implemented method of claim 8 wherein one rule of the set of rules comprises aligning a pair of child nodes, one from each dependency structure, if a tentative correspondence exists between them and if a parent node of each respective child node is already aligned to a corresponding parent node of the other child (*figure 2, and right column, page 3, mapping between parent nodes v and v'*), wherein one rule of the set of rules comprises aligning a pair of nodes, one from each dependency structure, if respective parent nodes of the nodes under consideration are aligned with each other and respective child nodes are also aligned with each other (*sections 5-6, greedy algorithm*).

11. Claims 24-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meyers et al. (from IDS submitted 11/4/2002) in view of Marcu (US Patent Publication No. 2002/0040292).

12. Regarding claim 24, Meyers et al. disclose a computer-implemented method of associating dependency structures from two different languages stored on a tangible computer readable medium, wherein the dependency structures comprise nodes organized in a parent/child structure, the computer-implemented method comprising:

aligning nodes of the dependency structures with correspondences on the tangible medium as a function of a set of rules comprising at least three rules (*section 4.2, page 3, particularly equation 2; aligning all possible correspondence of the source language and target language; for rules, referring to sections 5-6*); and

providing an output from a computer indicative of the alignment of the dependency structures (*section 4.2, page 3, pairing with maximum score is selected*).

Meyers et al. fail to specifically disclose wherein the dependency structures comprise a set of unaligned nodes and wherein after each of the rules are applied any aligned nodes are removed from the set of unaligned nodes before applying another rule. However, Marcu teaches wherein the dependency structures comprise a set of unaligned nodes and wherein after each of the rules are applied any aligned nodes are removed from the set of unaligned nodes before applying another rule (*paragraphs 61-65 on page 4; unaligned nodes are removed from the aligned nodes and further rules are applied to aligned nodes*).

Since Meyers et al. and Marcu are analogous art because they are from the same field of endeavor, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Meyers et al. by incorporating the teaching of Marcu in order to improve translation accuracy.

13. Regarding claims 25-26, Meyers et al. further disclose the computer-implemented method wherein each of the rules of the set of rules are applied to the dependency structures in a selected order (*sections 5-6*), wherein later rule applications use an alignment created by an earlier rule application as a reference point that is used to disambiguate between competing alignments (*section 4.2, page 3, particularly equation 2; all possible correspondence or pairings of the source language and target*

language are evaluated and the pairing with maximum score is the selected; eliminating all other pairings).

14. Regarding claims 27-29, Meyers et al. further disclose the computer-implemented method wherein the set of rules of the set of rules is again applied successively to the set of unaligned nodes (*Greedy algorithm in section 5, page 4, steps 1-5, particularly step 2-3*), wherein one rule of the set of rules comprises aligning a set of nodes if a bidirectionally unique translation exists (*sections 5-6*), wherein one rule of the set of rules comprises aligning a pair of parent nodes, one from each dependency structure having a tentative correspondence to each other, if each child node of each respective parent node is already aligned to a child of the other parent node (*section 4.2, page 3*).

15. Regarding claims 30-31, Meyers et al. further disclose the computer-implemented method of claim 8 wherein one rule of the set of rules comprises aligning a pair of child nodes, one from each dependency structure, if a tentative correspondence exists between them and if a parent node of each respective child node is already aligned to a corresponding parent node of the other child (*figure 2, and right column, page 3, mapping between parent nodes v and v'*), wherein one rule of the set of rules comprises aligning a pair of nodes, one from each dependency structure, if respective parent nodes of the nodes under consideration are aligned with each other and respective child nodes are also aligned with each other (*sections 5-6, greedy algorithm*).

Allowable Subject Matter

16. Claims 14-23 and 32-41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUYEN X. VO whose telephone number is (571)272-7631. The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Huyen X Vo/
Primary Examiner, Art Unit 2626

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